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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/766,677      | 01/23/2001  | Achim Wixforth       | P66217US0           | 2827             |

7590 10/09/2003

JACOBSON, PRICE, HOLMAN & STERN  
PROFESSIONAL LIMITED LIABILITY COMPANY  
THE JENIFER BUILDING  
400 SEVENTH STREET, N.W.  
WASHINGTON, DC 20004

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| EXAMINER |
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SIEFKE, SAMUEL P

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| ART UNIT | PAPER NUMBER |
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1743

DATE MAILED: 10/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/766,677

Applicant(s)

WIXFORTH, ACHIM

Examiner

Samuel P Siefke

Art Unit

1743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-70 is/are pending in the application.
- 4a) Of the above claim(s) 31-70 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-3, 6-8, 10-15 and 17-30 is/are rejected.
- 7) ☐ Claim(s) 4, 5, 9, 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3, 4, 7, 8.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## **DETAILED ACTION**

### ***Election/Restrictions***

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-30, drawn to a process of producing an acoustic surface wave, classified in class 436, subclass 177.
- II. Claims 31-70, drawn to a device for producing an acoustic surface wave, classified in class 422, subclass 82.

The inventions are distinct, each from the other because of the following reasons:

Inventions Group I and Group II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus can be practiced by another materially different process. A different means for producing surface waves may be used. For example a waves created by a non-electrical stimulating means.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Harvey Jacobson Jr. on September 30, 2003 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-30. Affirmation of this election must be made by applicant in replying to this

Office action. Claims 31-70 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims **1-3, 6-8, 10-14, 17, 25, 27-30** are rejected under 35 U.S.C. 102(b) as being anticipated by Haller et al. (USPN 6,010,316).

Haller discloses an acoustic micro pump that comprises: a micro pump in which a fluid is pumped by the interaction of longitudinal acoustic and the fluid in the microchannel. The micro pump has an acoustical transducer responsive to a high frequency input and directing a longitudinal acoustic wave (lamb waves, different frequencies) into a channel which induces a pressure gradient. The fluid in the channel flow (microfluidic device, walls of microfluidic are barriers or grooves) in the direction of travel of the acoustic wave in the channel (abstract). Interdigital converters are used to generate the acoustic surface waves (col. 4, lines 39-63). A piezoelectric effect is produced by use of a piezoelectric substrate (col. 4, lines 39-63). The use of multiple micro pumps is incorporated (col. 7, lines 4-42).

Claims **1-3,6-8,10-15, 17, 25-30** are rejected under 35 U.S.C. 102(b) as being anticipated by White (USPN 5,006,749).

White discloses a micromotor device for moving micro miniature elements along a predetermined path that comprises a piezoelectric substrate (col. 5, lines 30- col. 6, line 5); an ultrasonic transducer attached to one membrane surface for providing flexural wave action in the membrane. The wave produces linear movement of one or more microelements on a membrane for a variety of applications (abstract). Interdigital converters are used to generate the acoustic surface waves (col. 5, lines 6-40). A piezoelectric effect is produced by use of a piezoelectric substrate (col. 5, lines 16- col. 6, line 9). The use of multiple micro pumps is incorporated (fig. 8c). Two transducers are used which include interdigital converters with constant but different distances between the fingers of each (fig 14, ref. 104 and 30).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims **18-24** are rejected under 35 U.S.C. 103(a) as being unpatentable over White (USPN 5,006,749) in view of Northrup et al. (USPN 5,674,742).

White discloses a micromotor device for moving micro miniature elements along a predetermined path that comprises a piezoelectric substrate as discussed above.

White does not teach attaching an analyzer located at the end of the predetermined path for moving micro miniature elements for analyzing properties of the sample.

Northrup teaches a micrfabricated reactor that comprises sample reservoirs, agitators and mixers and optical or electromechanical sensors (abstract; col. 6, lines 40-55). It would have been obvious to one having an ordinary skill to modify the apparatus of White to include an optical detector for detecting particle separation or any physical, chemical, or biological characteristic for insuring that particle separation or the specific (chemical, biological, physical) characterization has occurred and observed through a detection means.

#### ***Allowable Subject Matter***

Claims **4, 5, 9, 16** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 4,5 and 9 all relate to wetting properties incuded on the solid body surface comprising at least one hydrophobic region and a hydrophilic region. Claim 16 would be allowable because the

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prior art does not disclose non-constant distances between the interdigital fingers for producing different frequencies.


### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel P Siefke whose telephone number is 703-306-0093. The examiner can normally be reached on M-F 7:00am-5:00pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on 703-308-4037. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

SPS



September 30, 2003



Jill Warden  
Supervisory Patent Examiner  
Technology Center 1700